

### **REMARKS**

Applicant respectfully requests reconsideration. Claims 1-54 were previously pending in this application. Claims 13, 19, 20, 22, 37 and 47-49 were withdrawn. Claims 1, 21, 28, 32-34, 39, 40-42, 46 and 54 are amended, support for these amendments are provided below. Claim 5 has been canceled. As a result, claims 1-4, 6-12, 14-18, 21, 23-36, 38-46 and 50-54 are pending for examination with claim 1 being an independent claim. No new matter has been added.

#### **Objection to the Specification**

The Examiner objected to the specification for the use of non-capitalized trademarks. Applicant has amended the specification and identified trademarks where appropriate.

Accordingly, reconsideration and withdrawal of this objection is respectfully requested.

#### **Rejections under 35 U.S.C. §101**

Claims 1-12, 14-18, 21, 23-36, 38-46 and 50-54 are rejected under 35 U.S.C. §101, because the claimed invention is directed to non-statutory subject matter. According to the Examiner, claims 1-12, 14-18, 21, 23-36, 38-46 and 50-54 do not produce a tangible result.

Applicant has amended claim 1 to include the limitation: "wherein the intensity profile is stored as an intensity versus length profile or an intensity versus time histogram". Support for this amendment can be found in the patent application at least in original claim 5, on page 10, lines 3-5, page 11 lines 18-20, page 27 lines 31-32 and page 31 describing storage of signals. The amended claim produces a tangible result stored in the specified form. Claims 2-4, 6-12, 14-18, 21, 23-36, 38-46 and 50-54 are dependent from claim 1.

Accordingly, reconsideration and withdrawal of this objection is respectfully requested.

#### **Rejections under 35 U.S.C. §112, second paragraph**

Claims 1 and 33 are rejected under 35 U.S.C. §112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, Applicant has amended claim 1 and dependent claims 21, 28, 33, 40-42, 46 and 54 and replaced the term "population profile" with "sample population profile".

Support for this amendment can be found in the specification at least on page 2 lines 21-29 and page 14, lines 9-21. The peak profile strictly speaking is “a population profile” because it is made up of a plurality of individual profiles. However, the peak profile is different from the “sample population profile” which represents all profiles obtained from the sample. The “sample population profile” is the profile to which the peak profile is compared.

Regarding claim 33, Applicant has amended claim 33 and inserted the words “further comprising”. Support for this amendment can be found in the written specification at least on page 4, lines 19-29.

Accordingly, reconsideration and withdrawal of this objection is respectfully requested.

Rejections under 35 U.S.C. §112, first paragraph

Claims 15 and 30 are rejected under 35 U.S.C. §112, first paragraph, as based on a disclosure that is not enabling. According to the Examiner, the step of determining the center of the molecule is “critical or essential to the practice of the invention” and the specification fails to provide guidance to determining the center of the molecule reference point in the absence of sequence non-specific labeling. Applicant respectfully traverses.

Initially, it is unclear why the Examiner has stated that the step of determining the center of the molecule is critical to the invention. The specification describes the use of the center of the molecule in the analysis as a preferred embodiment. For instance page 10, last paragraph – page 11 2<sup>nd</sup> paragraph it is taught that the reference point is preferably an internal reference point and preferably the center of the molecule. It is further taught that the reference point “May also be an origin of replication, a transcription promoter, a centromere, a highly repetitive sequence, and the like.” Additionally on pages 31-32 it is taught that “Although other internal reference points can be used, CM is particularly useful as the reference point when the polymer is incompletely stretched.” Thus, the use of CM as a reference point is preferred in some instances, i.e. when the molecule is completely stretched, but it is not required.

Additionally, the specification is enabling for determining a reference point, including a center of a molecule reference point, even in the absence of sequence non-specific labeling. Page 10, line 18-21 states: “It (the reference point) may be sequence dependent or sequence independent, depending on the polymer. Furthermore, it may be intrinsically detectable or it

may be detected through the use of an extrinsic probe, for example. Accordingly, the reference point may be visualized through the binding of a sequence specific probe or a sequence non-specific probe to the individual polymers.” Examples of sequence specific probes are provided on pages 19 and 20, while examples of labels for these sequence specific probes are provided on pages 25-27. The labels provided on these pages can also be used to intrinsically label the reference point. The specification therefore enables how to determine the center of a molecule, even in the absence of sequence non-specific probes, namely through sequence specific probes, or intrinsic labeling.

Accordingly, reconsideration and withdrawal of this objection is respectfully requested.

**CONCLUSION**

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,



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